

Application Serial No. 10/531,218
Reply to Office Action December 16, 2010

PATENT
Docket CU-4148

REMARKS

In the Office Action dated December 16, 2010, the Examiner states that claims 7-10 are pending and claims 7-10 are rejected. The Applicant believes that amendments are fully responsive to and overcome the rejections.

In the specification, please amend paragraph 49 to correct a typographical error. The amendments to the specification can be found in the Amendments section of this paper beginning on page 2. No new matter has been added. The Applicant submits that this amendment to the specification is fully responsive to the objection on page 2 of the office action. The Examiner is requested to withdraw the objection.

In the claims, please amend claim 7 to correct a typographical error. Please also newly add claim 11. Support for claim 11 can be found in the original disclosure, for instance in claims 1, 2, and 4 as originally filed. The amendments to the claims can be viewed in the Amendments section in the Listing of claims beginning on page 3 of this paper. No new matter has been added. The Applicant submits that the amendments to the claims are fully responsive to the objection on page 2 and overcome the objection. The Examiner is respectfully requested to withdraw this objection.

Claims 7-10 are rejected on page 2 under 35 U.S.C. §103(a) as being obvious and unpatentable over the admitted prior art ("Reference 1") (specification page 1 lines 19-33, page 2 lines 1-12) in view of Sucech (U.S. 5,643,510) and Japan (JP 10-330174) and further in view of Great Britain (GB 2,032,413) or Soviet Union (SU 1,252,322).

The applicant(s) respectfully disagree(s) with the Examiner. The Examiner provides that the admitted prior art does not recite forming the preliminarily produced foam using a foaming agent and a pore size adjusting

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agent. The fact remains that all of the features of the claims are not taught or suggested by the references in whole or in combination.

First, none of Sucech, Japan, and Great Britain or Soviet Union discloses or suggests at least a feature of "the pore size adjusting agent contains at least one substance selected from the group consisting of agents for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry; and the agent for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry contains at least one substance selected from the group consisting of sulfosuccinate-type surface active agents, sarcosinate-type surface active agents, alkylbenzene sulfonate-type surface active agents, alkane sulfonate-type surface active agents, and alkylbetaine-type surface active agents" as recited in currently pending claim 7.

In particular, Sucech may disclose a matter of "blending the first foaming agent and the second foaming agent together to form a blended stream of the foaming agents...; mixing the blended stream of foaming agents with the gypsum slurry to produce a foamed gypsum core wherein the mixing produces a multiplicity of large voids substantially uniformly distributed throughout the foamed gypsum core" in claim 1 of Sucech.

However, the matter of Sucech conflicts with at least a feature of "the pore size adjusting agent contains at least one substance selected from the group consisting of agents for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry" as recited in currently pending claim 7.

Furthermore, Japan may be considered to disclose a matter of "a compound having a deforming effect or a foam-breaking effect is added whereby joining of fine air bubble groups in a slurry is promoted and large air bubbles are formed instantaneously, and re-foaming of a foaming agent produced by foam breaking in a mixer is suppressed during agitation due to a foaming suppression

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effect of the compound so that it is possible to obtain uniform and large air bubbles in a core" in paragraph [0007].

However, the matter of Japan conflicts with at least a feature of "the pore size adjusting agent contains at least one substance selected from the group consisting of agents for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry" as recited in currently pending claim 7.

Moreover, Great Britain may disclose a "composition for use as a cement foaming agent which composition comprises: - (a) at least 20% by weight of the total surface active ingredient of an alkali metal monoalkylamidosulphosuccinate, which sulphosuccinate... and (b) at least 5% by weight of the total surface active ingredient of an alkali metal alkyl sulphate or alkali metal alkyl ether sulphate which... groups" in claim 1.

However, Great Britain does not disclose or suggest the "alkali metal monoalkylamidosulphosuccinate" as one of "agents for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry" as recited in currently pending claim 7. In particular, Great Britain discloses "a foam stabilizing amount of composition" in claim 12. Hence, it would be reasonable to consider that a "composition for use as a cement foaming agent", and accordingly, "an alkali metal monoalkylamidosulphosuccinate" should not be provided as one of "agents for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry" as recited in currently pending claim 7 but would be provided for stabilizing foam in cement.

Thus, Great Britain nowhere discloses or suggests a features of "the pore size adjusting agent contains at least one substance selected from the group consisting of agents for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry; and the agent for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry contains at least one substance selected

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from the group consisting of sulfosuccinate-type surface active agents, sarcosinate-type surface active agents, alkylbenzene sulfonate-type surface active agents, alkane sulfonate-type surface active agents, and alkylbetaine-type surface active agents" as recited in currently pending claim 7.

In addition, "an alkali metal monoalkylamidosulphosuccinate" disclosed in Great Britain is not provided for producing "a multiplicity of large voids substantially uniformly distributed throughout the foamed gypsum core" as disclosed in Sucech or for forming or obtaining "large air bubbles" as disclosed in Japan but instead would be provided for stabilizing foam in cement as disclosed in Great Britain. Herein, stabilizing foam in cement as disclosed in Great Britain would be different from producing of "a multiplicity of large voids substantially uniformly distributed throughout the foamed gypsum core" as disclosed in Sucech or forming or obtaining "large air bubbles" as disclosed in Japan.

Accordingly, there should be no motivation to apply "an alkali metal monoalkylamidosulphosuccinate" disclosed in Great Britain to "the first foaming agent" or "the second foaming agent" as disclosed in Sucech or "a compound having a deforming effect or a foam-breaking effect" as disclosed in Japan.

Thus, it should have been unobvious for those skilled in the art to combine the disclosure of Great Britain with the disclosure of Sucech or Japan.

In addition, Soviet Union is silent as to the feature of "the pore size adjusting agent contains at least one substance selected from the group consisting of agents for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry; and the agent for decreasing sizes of pores formed by bubbles in the foamed gypsum slurry contains at least one substance selected from the group consisting of sulfosuccinate-type surface active agents, sarcosinate-type surface active agents, alkylbenzene sulfonate-type surface active agents, alkane sulfonate-type surface active agents, and alkylbetaine-type surface active agents" as recited in currently pending claim 7.

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At least for the reasons provided above, claims 7 and 8 are non-obvious and patentable. Withdrawal of the rejection is respectfully solicited.

Second, none of the references disclose or suggest at least a feature of "the pore size adjusting agent contains at least one substance selected from the group consisting of agents for increasing sizes of pores formed by bubbles in the foamed gypsum slurry; and the agent for increasing sizes of pores formed by bubbles in the foamed gypsum slurry contains at least one substance selected from the group consisting of sulfuric acid, sulfamic acid, sodium hydroxide, and potassium hydroxide" as recited in currently pending claim 9.

In particular, none of Sucech, Japan, or Great Britain disclose or suggest a feature of "the agent for increasing sizes of pores formed by bubbles in the foamed gypsum slurry contains at least one substance selected from the group consisting of sulfuric acid, sulfamic acid, sodium hydroxide, and potassium hydroxide" as recited in currently pending claim 9.

Furthermore, Soviet Union may disclose "Mono (5-15C) alkyl sulphates neutralized with NaOH (I) are used as alkyl sulphates... in the foaming agent for foamed gypsum slurry" in the abstract of D4. However, "Mono (5-15C) alkyl sulphates neutralized with NaOH" as disclosed in Soviet Union does not correspond to "sodium hydroxide" as recited in currently pending claim 9 but rather should be "alkyl sulphates" (that is, sodium salts of mono (5-15C) alkyl sulphates that should be represented by (C5-C15 alkyl group)-O-SO₂-O⁻Na⁺) as disclosed in the abstract of Soviet Union. Thus, Soviet Union also does not disclose or suggest a feature of "the agent for increasing sizes of pores formed by bubbles in the foamed gypsum slurry contains at least one substance selected from the group consisting of sulfuric acid, sulfamic acid, sodium hydroxide, a potassium hydroxide" as recited in currently pending claim 9.

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Therefore, currently pending claim 9 and currently pending claim 10 depending therefrom (and new claim 11 depending from currently pending claim 9) are also non-obvious and allowable over the disclosures of Sucech, Japan, Great Britain, and Soviet Union, in whole or in combination.

Consequently, the Applicant(s) respectfully request(s) withdrawal of the claim rejection written in the office action.

In light of the foregoing response, all the outstanding rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,

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Date



Attorney for Applicant
Zareefa B. Flener
Registration No. 52,896

Ladas & Parry LLP
224 South Michigan Avenue
Chicago, Illinois 60604
(312) 427-1300